



gaattcatctgtcgacttaccacggaggttcccgaggatccggagaaggatcctgcagccccgagtc 60  
 cccgaggataaaggcttgggttcatccttcctggatcacactccacacagtccctcaggct 120  
 tcccccaatccaggggactcgccggacgcgtATGGACATTTCACTCAGTGC 180  
 M D D I F T Q C 8  
 CGGGAGGGCAACCGCAGTCGCCGTGGCTTGCCCTGCGACAACACGGAGAACGACCTCAAC 240  
 R E G N A V . A V R L W L D N T E N D L N 28  
 CAGGGGGACGATCATGGCTTCTCCCTGGCACTGGGCGCTGGCGAGAGGGGGCTCTGCT 300  
 Q G D D H G F S P L H W A C R E G R S A 48  
 GTGGTTGAGATGTTGATCATGGGGCACGGATCAATGTAATGAAACCGTGGGGATGAC 360  
 V V E M L I M R G A R I N V M N R G D D 68  
 ACCCCCCTGCATCTGGCAGCCAGTCATGGACACCCGTGATATTGTACAGAAGCTATTGCAG 420  
 T P L H L A A S H G H R D I V K L L Q 88  
 TACAAGGGAGACATCAATGCAGTGAATGAAACACCGGAATGTGCCCTGCACTATGCCCTGT 480  
 Y K A D I N A V N E H G N V P L H Y A C 108  
 TTTTGGGGCAAGATAAAGTGGCAGAGGGACCTGGTGGCAAATGGGGCCCTTGTCAAGCATIC 540  
 F W G Q D Q V A E D L V A N G A L V S I 128  
 TGTAACAAGTATGGAGAGATGCCGTGGACAAAGCCAAGGCACCCCCCTGAGAGGCTTCCTC 600

FIG. 1a (SEQ. ID. NO. 1)  
(continued on page 2/23)



Fig. 1a (SEQ. ID. NO. 1)  
Continued on page 3/23



GAGGACATGACTGCCGAATTAGCATGGCTGATGTCAAGTTCTTCCAAATGTCCTGGT	1200
E D M T A R I S M A D V K F S F Q C P G	348
CGCATGCTATGCCACCTGGCTAGCCCCGAAAGCTCTGCAGAAGAACCTGAAAGACA	1260
R M Y A P A W V A P E A L Q K P E D T	368
AACAGACGCTCAGCAGACATGTCAGTTGCAAGTGCTTCTGTGGAAACTGGTACACGG	1320
N R R S A D M W S F A V L L W E L V T R	388
GAGGTACCCCTTGTGACCTCTCCAAATAATGGACATTGGAATGAAGGTGGCATGGAAAGGC	1380
E V P F A D L S N M E I G M K V A L E G	408
CTTGGCCTTACCATCCCACCAAGGTATTCCCTCATGTTGTAAGCTCATGAAGATCTGC	1440
L R P T I P P G I S P H V C K L M K I C	428
ATGAATGAAAGACCCCTGCAAAGCGACCCAATTGACATGATTGTGCCTATCCTTGAGAAG	1500
M N E D P A K R P K F D M I V P I L E K	448
ATGCAGGACAAGTtaggacttggaaaggcccttgccacttgcggacatgg	1560
M Q D K *	
tggggaaatgtcacccaaaggcaggcccttgttgcctccccccctccaggatcat	1620
ggtaactaccctccaggccctgggtccatccccatccctaccactgtcgcaaggagg	1680
ggggggctcagagcttgcacttgcacatgggtctcccaacatggggatcagcc	1740
ccgcctgtcacaataaagtattatgaaaaaaaaaaaaaaa	1789

3/23



Csk	NMKELKLLQ	TIGKGEFGDV	MLGDYRGN	K	VAVKCIKND	TAQ	AF	(SEQ. ID. NO. 15)
Yes	IPRESLRLEV	KLGQCCFGEV	WMGTWNGTTK	VALKTLLKPGT	MMPEAFLQ	..	(SEQ. ID. NO. 4)	
Ctrl	IPWCDLNIKE	KIGAGSFGTV	HRAEWTHGS	D	VAVKILMEQD	FHAE	RVNEF	(SEQ. ID. NO. 5)
B-raf	IPDGQITVGQ	RIGSGSFGT	YKGKWHG	.. D	VAVKMLNVTA	PTPQQ	LQAF	(SEQ. ID. NO. 6)
Ilk	IDFKQLNFLT	KLNENHSGEL	WKGRWQGN	.D	IWWKVLDKVR	DWSTRKS RD	DF	(SEQ. ID. NO. 16)

III

Csk	LAEASVMTQ	LRHSNLVQLL	GVIVEE	KGG	LYIVTEYMAK	GSLVDYLRSR
Yes	EAQIMKK	LRHDKLVPLY	AVVSEE	.. P	YYIVTEFMTK	GSLLDFLKEG
Ctrl	LREVAIMKR	LRHPNTIVLFM	GAVTQOPP	.. N	LSIVTEYLSR	GSLYRLLHKS
B-raf	KNEVGVLRK	TRHVNTILLFM	GYSTKP	.. Q	LAIVTQWC EG	SSLXHHHLHII
Ilk	NEECPRIRI	FSHPNVLPVL	GACQSPPAPM	PTLITHWMPY	GSLYINVVLHE	

IV

Csk	LAEASVMTQ	LRHSNLVQLL	GVIVEE	KGG	LYIVTEYMAK	GSLVDYLRSR
Yes	EAQIMKK	LRHDKLVPLY	AVVSEE	.. P	YYIVTEFMTK	GSLLDFLKEG
Ctrl	LREVAIMKR	LRHPNTIVLFM	GAVTQOPP	.. N	LSIVTEYLSR	GSLYRLLHKS
B-raf	KNEVGVLRK	TRHVNTILLFM	GYSTKP	.. Q	LAIVTQWC EG	SSLXHHHLHII
Ilk	NEECPRIRI	FSHPNVLPVL	GACQSPPAPM	PTLITHWMPY	GSLYINVVLHE	

V

Csk	LAEASVMTQ	LRHSNLVQLL	GVIVEE	KGG	LYIVTEYMAK	GSLVDYLRSR
Yes	EAQIMKK	LRHDKLVPLY	AVVSEE	.. P	YYIVTEFMTK	GSLLDFLKEG
Ctrl	LREVAIMKR	LRHPNTIVLFM	GAVTQOPP	.. N	LSIVTEYLSR	GSLYRLLHKS
B-raf	KNEVGVLRK	TRHVNTILLFM	GYSTKP	.. Q	LAIVTQWC EG	SSLXHHHLHII
Ilk	NEECPRIRI	FSHPNVLPVL	GACQSPPAPM	PTLITHWMPY	GSLYINVVLHE	

283

VIa

VIB

Csk	GRSV	LGGDC	LLKFSLDVCE	AMEYLEGN	..	NFVHRLAA	RNVLV	S E
Yes	EGKF	LKLPO	LVDMAAQIAID	GMAYIERM	..	NYIHRDLRA	ANILVG	D
Ctrl	GAREQLDERR	RLSMAYDVAK	GMNYLH	.NRN	PPIVHRLKS	PNL	LLV DK	
B-raf	ETKFEMI	.. K	LIDIARQTAQ	GMDYLHAK	.. SIIHRDLKS	NNIIFLH	E	
Ilk	GTNFVUDQSQ	AVKFALDMAR	GMAFLH	.TLE	PLIPRHALNS	RSVMI	.DE	

329



Csk	DNVAKVSDFG LTK.	EA SSTQDTGKLP	VKWTAPEALR	... EKKFSTK (SEQ. ID. NO. 15)
Yes	NLVCKIADFG LARLIED.	NE YTARQGAKFP	IKWTAPEAL	... YGRFTIK (SEQ. ID. NO. 4)
Ctrl	KYTUVKUVDFF	LSRLKAS.TF	LSSKSAAGTP	... DEPSNEK (SEQ. ID. NO. 5)
B-r a f	DLTVKIGDFG LATVKSRWSG	SHQFEQLSGS	ILWMAPEVIR	MQDKNPYSFQ (SEQ. ID. NO. 6)
Tlk	DMTARIS...	MADVFKFSFQC	PGRM.YA..P	AWVAPEALQ KKPEDTNRSS (SEQ. ID. NO. 16)

## VII

## VIII

Csk	SDVWSFGILL WEIYSFGRVP	YPRIPPLKD.V	VPRVEKGY	... KMDAPDGCPP
Yes	SDVWSFGILL TELUTKGDRV	YPGMVNRE.V	LEQVERGY	... RMPCPQGCCPE
Ctrl	SDVYSFGVIL WELAT.LQQP	WGNL.NPAQV	VAAVGFKCK.	... RLEIPRNLLNP
B-r a f	SDVYAFGIVL YELMT.GQLP	YSNINNRDDQI	FMVGRGYLS	PDLISKVRNSC
Tlk	ADMWSFAVLL WELVTR.EVP	FADLSNMEIG MK.	VALEG	R.TIPPGISP 418

## IX

Csk	SDVWSFGILL WEIYSFGRVP	YPRIPPLKD.V	VPRVEKGY	... KMDAPDGCPP
Yes	SDVWSFGILL TELUTKGDRV	YPGMVNRE.V	LEQVERGY	... RMPCPQGCCPE
Ctrl	SDVYSFGVIL WELAT.LQQP	WGNL.NPAQV	VAAVGFKCK.	... RLEIPRNLLNP
B-r a f	SDVYAFGIVL YELMT.GQLP	YSNINNRDDQI	FMVGRGYLS	PDLISKVRNSC
Tlk	ADMWSFAVLL WELVTR.EVP	FADLSNMEIG MK.	VALEG	R.TIPPGISP 418

## X

Csk	AVYEVMKN	CWHLDAAMRP	SFLQLREQLE	HIKTHEL
Yes	SLHELMKL	CWKKDPDERP	TFEYIQSFILE	...
Ctrl	QVAATIEG	CWTNEPWKR	SPATIMDLIR	PL...
B-r a f	PKAMKRLMAECLKKRDERP	LFPOQILASIE	LLARSLLP	...
Tlk	HVCKLMKI	CMNEDPAKRP	KFDMIVPILE	KMQDK.



ANKYRIN  
CONSENSUS

-G-TPLH-AA--GH---V---LL--GA--N---- (SEQ. ID. NO. 17)

A D

3<sup>3</sup> HGFSPHLHWACREGRSAVVEMILMRCARINVMNR (SEQ. ID. NO. 18)  
GDDTPPLHLAASHGHGRDIVQKLLQYKADINNAVNE (SEQ. ID. NO. 19)  
HGNVPLHYACFWGQDQVAEDLIVANGALVSICNK (SEQ. ID. NO. 20)  
YGEMPVDKAKAPLRELLERAEKMGQNLNRPY<sup>164</sup> (SEQ. ID. NO. 21)

Fig. 1c